

Program Announcement *NE –INERI-2002-001*
International Nuclear Energy Research Initiative
Final, 6/12/02

AGENCY: United States (US) Department of Energy (DOE)
Office of Nuclear Energy, Science and Technology (NE)

ACTION: The US Department of Energy National Laboratories are invited to submit Field Work Proposals under the International Nuclear Energy Research Initiative for funding of collaborative projects with participants from the Republic of Korea in the development of advanced nuclear power systems.

SUMMARY:

The Office of Nuclear Energy, Science and Technology (NE), US Department of Energy (DOE), in cooperation with the Ministry of Science and Technology (MOST) of the Republic of Korea (ROK) is interested in receiving Field Work Proposals (FWPs) for collaborative scientific and engineering research and development (R&D) with participants from the ROK in the field of nuclear energy under the International Nuclear Energy Research Initiative (I-NERI). The I-NERI program is designed to support innovative collaborative research on a bilateral basis to address the principal technical and scientific obstacles to future use of nuclear power world-wide.

The Department initiated I-NERI program development and planning early in Fiscal Year 2001. The bilateral US/ROK collaborative R&D program awarded six I-NERI projects to US/ROK teams in December 2001 as a result of the 2001 I-NERI program solicitation. This solicitation is intended to expand the number and scope of projects in the US/ROK collaboration as part of the ongoing development of the I-NERI program with cooperating countries from around the globe.

A memorandum of understanding (MOU) between US-DOE and ROK-MOST, dated June 14, 1996, as subsequently amended, constitutes the umbrella agreement for cooperative R&D between DOE and MOST in broad fields of study. The bilateral US/ROK I-NERI collaboration in nuclear energy development was formally authorized and initiated with the mutual approval by DOE and MOST of Annex V to the US/ROK MOU dated May 16, 2001.

This program announcement applies only to FWPs from DOE national laboratories for US/ROK collaborations under I-NERI where the laboratory is the lead US performing organization that will be responsible for the proposed work. Where DOE laboratories are included secondarily in international collaborative arrangements with non-federal organizations, and not as lead performers, such joint proposals should be submitted in response to the separate, but equivalent Financial Assistance Solicitation Number DE-RPO6-02RL14400. **DOE laboratories participating in a proposal led by a non-federal party must also submit separate FWPs for their portions of the joint**

proposal in accordance with the guidelines in this RFP and the practices and procedures of their respective local DOE operations offices.

The FWP's for I-NERI grants under this solicitation must reflect collaborative arrangements for cooperative R&D involving at least one participant from the US and one participant from the ROK. The ROK participants will be funded under separate financial support from MOST. Participation of ROK parties in I-NERI will be invited through a separate, but equivalent solicitation being issued by MOST simultaneously with this program announcement. Collaborative arrangements may involve US and ROK federal and non-federal organizations, in lead roles and/or as subcontractors. The work scope and corresponding funding of all participants must be separately identified in the applications. A single proposal shall be jointly prepared by the US and ROK lead organizations and shall be submitted by the lead organizations in response to this Program Announcement for each collaborative R&D project.

SUBMITTAL INSTRUCTIONS:

Completed applications are required to be submitted as an Adobe PDF file via the Industry Interactive Procurement System (IIPS) in accordance with the instructions outlined in this solicitation and the IIPS User Guide. The Guide can be obtained by going to the IIPS Homepage at: <http://e-center.doe.gov> and then clicking on the "Help" button. Individuals who have the authority to enter their institution into a legally binding contract/agreement and intend to submit proposals/applications via the IIPS system must register and receive confirmation that they are registered prior to being able to submit an application on the IIPS system. Once an applicant is registered with IIPS, a signature on the IIPS is the typed name of the applicant in Block 18 of the Standard Form 424. Questions regarding the operation of IIPS may be sent via e-mail to the IIPS Help Desk at; IIPS_HelpDesk@e-center.doe.gov or **call** via phone at (800) 683-0751.

The only acceptable mode of application submittal / transmission is through IIPS. Applications submitted through the U.S. Postal Service, facsimile, telegraphically, courier companies, or hand-delivered hard copies will be considered non-responsive.

APPLICATION DUE DATES:

The Standard Form 424, the technical application, must have an IIPS transmission timestamp of not later than **5:00 p.m. PDT August 30, 2002.**

In addition to the IIPS submittal, by August 30, 2002, the lead Korean performing organization shall provide a signed original, three copies of the FWP, and a CD containing the FWP, ***without the separate cost proposal***, in Microsoft Word for Windows format to; Dr.Sung-Sik Kang, Nuclear Technology Program, Korean Institute of Science & Technology Evaluation and Planning (KISTEP), 8F Dongwon Industry Building, 275, Yangjae-dong, Seocho-gu Seoul 137-130, Korea.

Eligibility: This program announcement invites FWP's from DOE national laboratories acting as the lead performing organization of a collaboration involving the ROK lead performing participant. PNNL is not eligible to participate in responses to this program announcement due to their role as Executive Agent for DOE.

Awards: It is anticipated that award selection will be made on or before December 15, 2002 with awards issued to the successful organizations within approximately 30 days of announcement. FWP's for projects with periods of performance of one to three years will be funded on an annual basis subject to the availability of funds and, where applicable, successful completion of previous phases. Up to a total of \$2 million of US Government fiscal year 2002 funds are expected to be available for awards to fund US research organizations under this program announcement and the complementary grants and cooperative agreements Solicitation. An approximately equivalent amount will be made available by MOST to ROK participants under the selected joint proposals.

Any financial assistance awarded as a result of this announcement shall be contingent upon the availability of appropriated funds. No legal liability on the part of the US Government for the payment of any money shall arise unless and until appropriated funds are made available to the Contracting Officer for these awards.

Typical DOE funding for collaborative research awards is expected to be in the range of \$200,000 to \$400,000 per project, per year for US participants. MOST will fund ROK participants for the selected project awards. It is intended that DOE and MOST will fund I-NERI in equivalent amounts on a program basis, but not necessarily on the individual project basis. Large collaborative research projects involving multiple US and ROK organizations may receive larger awards if merited. The period of performance for individual projects is expected to be one to three years.

DOE reserves the right to fund, in whole or in part, any, all, or none of the FWP's submitted in response to this program announcement, and will award the number of grants that serve the public purpose and are in the best interest of the US Government.

BACKGROUND:

In January 1997, the President of the United States requested his Committee of Advisors on Science and Technology (PCAST) to review the current national energy research and development (R&D) portfolio, and provide a strategy to insure the US has a program to address the Nation's energy and environmental needs for the next century. In its November 1997 report responding to this request, the PCAST Energy Research and Development Panel determined that assuring a viable nuclear energy option to help meet our future energy needs is important; and that a properly focused R&D effort should be implemented by DOE to address the principal obstacles to achieving this option, including issues involving nuclear waste, proliferation, economics, and safety.

In 1999, on the basis of the PCAST recommendations, DOE established the Nuclear Energy Research Initiative (NERI) to help overcome the principal technical and scientific issues affecting the future use of nuclear energy in the United States. At the present time 56 projects are funded under the NERI program. Abstracts of the funded NERI projects are provided on the NERI web page at <http://neri.ne.doe.gov> under the R&D Awards section.

The I-NERI program was initiated in 2002 in response to the PCAST recommendations. At the present time, twelve projects are funded under the I-NERI program. Abstracts of the funded I-NERI projects are provided on the I-NERI web page at <http://www.pnl.gov/ineri>.

Respondents are encouraged to refer to these abstracts in the preparation of new applications under the I-NERI program announcement to identify potential collaborations and to avoid duplication with on-going NERI and I-NERI research projects.

I-NERI PROGRAM DESCRIPTION:

Goals & Objectives: The International Nuclear Energy Research Initiative (I-NERI) Program sponsors innovative scientific and engineering research and development (R&D), in bilateral or multilateral cooperation with participating countries, to address the key issues affecting the future of nuclear energy and its global deployment by improving cost performance, enhancing safety, and increasing proliferation resistance of future nuclear energy systems. In accomplishing this primary goal, the following objectives have been established for the I-NERI Program:

- Develop advanced concepts and scientific breakthroughs in nuclear energy and reactor technology to address and overcome the principal technical and scientific obstacles to the expanded use of nuclear energy worldwide
- Promote bilateral and multilateral collaboration with international agencies and research organizations to improve development of nuclear energy
- Promote and maintain nuclear science and engineering infrastructure to meet future technical challenges

R&D Approach: I-NERI provides an effective means for international collaboration on a leveraged, cost-shared *quid pro quo* basis. Actual cost-share amounts are determined for each project jointly selected. The program has a goal to achieve about a 50-50 matching contribution with each partner country at the program level.

The network of international partnerships will result in well coordinated and cost-effective R&D that, in time, will provide the world with safe, proliferation resistant

reactors that produce less waste and are more economical than the current generation of plants.

Program Control: A US/ROK Bilateral I-NERI Committee (BINERIC), led by representatives from DOE and MOST, has identified specific research areas for mutually beneficial collaboration and will decide other bilateral cooperation issues, such as required agreements, eligibility for participation, project selection processes, joint funding structure, and contractual vehicles.

Project Selection: Proposals are solicited simultaneously in the United States and in the Republic of Korea. Because funded projects are bilateral collaborative efforts, joint research teams are required to create integrated project proposals. Proposals will be formally reviewed and grants awarded on a merit basis to select the best potential collaborative projects that meet the solicitation criteria. Final decisions in selection of high merit, mutually beneficial proposals are made by the BINERIC.

R&D Areas: For the DOE/MOST collaboration, the specific R&D areas identified by the BINERIC for the 2002 I-NERI solicitation were limited to three in recognition of budget constraints and to facilitate timely completion of the solicitation and award of projects. The R&D areas for the solicitation are:

- Next generation reactor and fuel cycle technology (including by reference non-proliferation and safety)
- Innovative nuclear plant design, manufacturing, construction, operation, and maintenance technologies (including by reference instrumentation, controls and robotics)
- Advanced nuclear fuels and materials

Prospective applicants should submit proposals that directly support the specified R&D areas as further described below. In formulating prospective projects, the current state of development in the areas to be investigated should be recognized to identify potential synergies and avoid repeating work already accomplished. In particular, research underway in ongoing NERI, I-NERI, or other DOE projects should not be duplicated. Abstracts for current NERI and I-NERI projects may be found on the respective web pages at: <http://neri.ne.doe.gov> and <http://www.pnl.gov/ineri> under the R&D Awards section. Other DOE programs conducting nuclear energy and related research that should be considered when preparing a proposal include the Office of Science- Basic Energy Sciences program and the Office of Nuclear Energy, Science and Technology- Nuclear Engineering Education Research (NEER) grant program.

Scope of Work: In this solicitation, the parties are seeking applications for new and innovative collaborative R&D under the DOE/MOST Collaborative I-NERI Agreement. Proposed work is expected to contribute significantly to meeting the I-NERI objectives in the specific R&D areas and work elements as follow;

Next generation reactor and fuel cycle technology: This R&D area includes the investigation and preliminary development of advanced concepts, technologies, and approaches that offer prospects for improved performance and operation, design simplification, enhanced safety, reduced waste production, improved proliferation resistance and reduced overall cost of potential next generation reactor designs and fuel cycles. Proposed projects may involve innovative reactor, system or component designs, alternative power conversion cycles for terrestrial applications, or other important design features and characteristics. The selected system concept may also produce electrical power if warranted.

Applications for projects involving advanced reactors under this program element may address, among other items, the characteristics, principal attributes, feasibility, safety features, proliferation resistance, economic competitiveness, and additional research that may be required. These reactor concepts may include innovative, next generation reactor and fuel cycle concepts, including metal fueled fast reactors, high temperature gas cooled reactors, light water reactors, or other advanced concepts designed to achieve higher performance and efficiencies. Desirable features might include long-lived reactor cores that minimize, or avoid altogether, the need for refueling, concepts that maximize fuel burn-up or employ advanced energy conversion technology. In addition, research into analytical techniques and technologies aimed at supporting the design and licensing of next generation reactors could also be pursued. These include such topics as, innovative safety research, advanced computational methods (seismic, thermal-hydraulic, reactor physics), and advanced radioactive waste management technologies.

Innovative nuclear plant design, manufacturing, construction, operation, and maintenance technologies: This R&D area includes the investigation, development, and verification of innovative technologies that support the deployment of advanced reactor designs, including construction, operation, and maintenance of such reactors. This area includes advanced instrumentation, controls, and diagnostic tools for reactor and power conversion systems that offer the prospect of improved performance and operation, design simplification, enhanced safety, and reduced overall cost.

Competitive nuclear plant costs are necessary to restore nuclear power as a viable option to help meet future electrical power demands. Therefore, this program element will include projects intended to identify and evaluate innovative design, manufacturing, and construction technologies that reduce the costs of constructing, maintaining and operating future nuclear power plants. As an example, the use of modularization and/or prefabrication already has been demonstrated to shorten the construction schedule. As another example, increased automation and use of innovative remote tooling and robotics concepts in the manufacture of equipment, construction and maintenance of advance reactors, and in the handling of spent nuclear fuel also has the potential of significantly reducing costs.

Other work elements in this R&D area include, research into innovative systems, components, and computational approaches for improving the monitoring, assessment,

and control of nuclear reactor and power system operations and components, advanced digital instrumentation and controls, advanced simulation technology, and software validation and verification.

Advanced nuclear fuels and materials: This R&D area includes the investigation and preliminary development of advanced nuclear fuels and materials that offer prospects for improved performance and operation, design simplification, enhanced safety, improved proliferation resistance, reduced waste production, and improved economics.

This research includes improvements in the performance of fuels for light water reactors as well as other advanced applications systems. Appropriate topics include, but are not limited to: innovative concepts for material preparation and production of nuclear fuels; inherently safe fuel designs and core response; understanding of life-limiting phenomena for high burn-up or long life fuels; high temperature fuel and material performance; critical safety data and reactor physics data for advanced fuel designs, advanced fuel compositions and enrichments above 5%; and innovations in fuel design, composition or other attributes that maximize energy production, optimize fissile material utilization, reduce production cost, and reduce spent fuel inventory.

Material sciences applications may be for research and development on materials for use in advanced nuclear reactor systems, structures, and components, including fuel cladding, that may perform in high-radiation fields, high-temperatures and pressures, and/or corrosive environments. This includes: the environmental effects on materials, in particular the effects of the radiation, chemical and thermal environments, and aging; the mechanical behavior of materials, including fracture mechanics, creep, and fatigue; and advanced materials, processes, computational methods and diagnostics.

COLLABORATIVE FWP REQUIREMENTS:

The I-NERI program requires International collaboration involving at least one participant organization from the US and one from the ROK, respectively, on all I-NERI projects. Collaborative proposals involving more than one US organization and more than one ROK organization are allowed, providing there is a minimum of one US and one ROK organization. Under this program announcement, collaborative FWPs should identify the national laboratory lead organization and Principal Investigator (PI), the ROK lead organization and PI, and all participating organizations. The FWP must identify the individual work scope, responsibilities, and costs for each US and ROK participant organization. The lead DOE national laboratory should submit a single FWP, which integrates the overall project work scope and costs assigned to each participant. Other secondary national laboratory participants, if any, must submit separate FWPs for their share of the proposed project. The lead ROK organization must also submit the collaborative FWP (***without the detailed financial information***) to KISTEP.

University nuclear engineering programs supply highly skilled workers that are vitally important to government and industry success in nuclear energy technology

development and production. To help ensure the viability of the nuclear industry the DOE provides assistance to university nuclear science and engineering programs. The Department therefore encourages collaborations that include university involvement, and in particular, active involvement of graduate and undergraduate students in I-NERI projects.

For successful FWP, the lead DOE national laboratory will be funded directly by DOE. The lead lab will fund other US non-federal participants via subcontract or other arrangements. As noted, secondary national lab participants will be separately funded by the DOE contracting organization. The private sector or academic organizations must include a Standard Face Page (form 424) and Budget Pages (form DOE F.4620.1) for their portions of the project in the FWP. Separate Budget Pages must be included for the DOE national laboratory portions. A Standard Face Page should be provided by the lead national laboratory for the complete package showing the total cost and individual collaborator organization costs for each year of the project. All costs should be specified for each year on an elapsed time basis, and not a fiscal year basis. The collaborative FWP must be submitted to DOE as one package, **with the technical and financial proposals in separate volumes.**

Collaboration with international organizations requires all DOE funding to be used for work performed by the US participants. Such collaborative arrangements are subject to approval by DOE and must comply with any Federal restrictions on foreign participation, and with any current DOE memoranda of understanding or other general agreements between DOE and the participating foreign entity.

FORMAT AND INFORMATION TO BE INCLUDED IN THE APPLICATION:

Applications in response to this solicitation shall include a technical proposal and separate cost proposals in accordance with the following requirements.

Since business sensitive information may be included in cost proposals, DOE and MOST should only receive detailed cost proposals from their respective organizations. US organizations participating as the lead or as a collaborator on a project shall submit a cost proposal only to DOE. Similarly, Korean organizations participating as the lead or as a collaborator on a project shall submit cost proposals only to MOST in accordance with Korean requirements. Project summary level budget information for each organization shall be included in the technical proposal as stated below.

General Requirements:

- Applications/FWPs shall be written in English;
- Budgets should be expressed in US dollars, specified for each year of the project on an elapsed time basis, and not a fiscal year basis;
- Applications should clearly present the objectives, work scope including tasks to be performed, key milestones for each year, schedule, costs, and the importance/significance of the proposed project;

- Project Schedule and Milestones should include key programmatic milestones at the end of each budget year (based on a 12 month elapsed time, not on a fiscal year basis) including annual reports and project reviews. In addition, specific deliverables of the research must be identified such as results of key analyses, experimental data and correlations, computer codes produced or validated, etc. These deliverables may be in the form of topical reports, journal articles or other quantifiable products of the R&D which can be utilized by industry and/or other researchers in the development of next generation nuclear energy technology;
- The individual responsibilities of participating organizations should be clearly identified in the proposal work scope tasks.

Technical proposal requirements:

- Standard Face Page (*DOE Form 424*);
- Table of Contents;
- Project Abstract (no more than 2 pages, provided separately for easy extraction);
- Project Description - narrative description of the proposed project including objectives, background, R&D plan including an itemized work plan showing individual tasks and responsible organizations, and a statement describing the importance of proposed project (no more than 20 pages);
- Project Schedule and Milestones, including key milestones at the end of each budget year (based on a 12 month interval, not on a fiscal year basis) and specific R&D deliverables as noted above;;
- R&D Collaboration - description of the collaborative arrangements between participating organizations defining general responsibilities and tasks assigned to each participating organization (up to 2 pages);
- Organization & Qualifications - identification of the project organization, and qualifications and responsibilities of the participating organizations. US and ROK lead organizations and project managers/principal investigators must be identified; Biographical sketches of the project manager/principal investigators and other key project personnel shall be included (no more than 2 pages each);
- Facilities & Resources - information on the experience of the applicant organization and the adequacy of required facilities and resources (no more than 3 pages);
- Project Summary Budget – summary budget table (per Attachment A) defining total and individual funding requirements for each participating organization by major task, for each year, and total project period. Annual periods shall be based on a 12 month elapsed period rather than on fiscal year basis. This summary table is required in the body of the proposal.
- Where applicable, a written statement that to the best of the lead applicant's knowledge, the effort performed by a collaborating DOE national laboratory will not place the laboratory in direct competition with the domestic private sector.

Cost Proposal Requirements:

The following cost proposal requirements are intended for US organizations responding to the solicitation as a lead or collaborating organization on an I-NERI project. **Note that the cost proposal (other than the summary per attachment A) must be a**

separate volume that may be easily separated from the technical proposal. The cost proposal of the US participants is provided only to DOE.

- DOE laboratories provide the standard Field Work Proposal face page (*DOE form BUD 11A&B*) and detail attachments as required;
- All other US proposers provide the Standard Face Page (*DOE Form 424*) with the project title and Cost proposal identification;
- Project Summary identifying the organizations involved and a short general description of each organization's role;
- Detailed budgets and supporting information shall be submitted for each participating US organization using DOE form F.4620.1. Budget forms shall be submitted for each year and for the total project period; total budget for each year and total project period; all annual budgets should be based on 12 months elapsed time and not on a fiscal year basis. These budget forms should support the funding summary information provided in the Technical Proposal.

Required forms can be accessed through the Richland Operations Office Procurement website at <http://www.hanford.gov/procure/pro.htm>

FIELD WORK PROPOSAL REVIEW PROCESS: All valid FWP's will be evaluated in accordance with the requirements of Title 10, Code of Federal Regulations (CFR), Part 600.13.

DOE and MOST will perform an initial screening of the FWP's for conformance with the technical and administrative requirements stated in this announcement, and for general relevance to I-NERI program objectives. FWP's determined not to be in conformance with the solicitation requirements, particularly the work scope section, may be removed from further consideration.

- For those FWP's that successfully complete the initial screening, a peer review will be performed to evaluate technical and/or scientific merit, and cost aspects of the proposals, exclusive of NE programmatic and policy factors. The peer review will be done in accordance with guidelines approved by DOE. The peer review will evaluate the proposals in accordance with the evaluation criteria stated below. For this purpose, three or more professionally and technically qualified persons will be selected in such a manner as to assure the highest degree of independence and objectivity. The reviewers may include any mix of federal and non-federal experts, except those persons involved in approving/disapproving the award selections. Reviewers must comply with the requirements for avoiding conflict of interest as stated in 10 CFR 600.14.
- A parallel, but equivalent screening and peer review of the applications will be conducted by MOST by their applicable procedures.

- Following the DOE/MOST peer reviews, a joint programmatic-relevance review will be performed by the BINERIC for those proposals judged to be of the highest merit. The FWP's will be evaluated with respect to applicable NE and MOST programmatic and policy factors, including relevance of the proposed work to I-NERI program objectives, balance among program elements to be supported, availability of funds, conformance to DOE/MOST policies and programmatic objectives. The BINERIC will make the final selection of proposals for I-NERI awards.

EVALUATION CRITERIA: The following evaluation criteria and the associated weighting factors (in parentheses) apply to the objective merit review:

- Merits of technical approach and potential value of R&D deliverables (40%)
 - Supports an area of high national priority
 - Addresses area with market barriers to private sector investment
 - Incorporates industry involvement and priorities
 - Provides potential for clear public benefit
 - Addresses areas of high technological risk
 - Based on feasible approach, building on existing technology, related R&D
 - Provides quantifiable deliverables of practical value
- Degree of innovation and uniqueness of the proposed research (15%)
- Qualifications of investigators (15%)
- Adequacy of facilities and equipment to be used in the proposed research (15%)
- Apparent adequacy and reasonableness of cost and schedule (15%)

INTELLECTUAL PROPERTY RIGHTS: With respect to intellectual property, the patent and data provisions set forth in the national laboratories M&O contract shall be used.

Management of intellectual property rights under the I-NERI program is also subject to the terms and conditions of Annex 1 to the Memorandum of Understanding (MOU), which provides the umbrella agreement for cooperative R&D between DOE and MOST

STATUTORY AND REGULATORY AUTHORITY: The International Nuclear Energy Research Initiative (I-NERI) program will be conducted under the authority of the Energy and Water Development Appropriations Act of 2001. The Catalog of Federal Domestic Assistance (CFDA) number is 81.121 and the applicable DOE Financial Assistance Regulations, 10 CFR Part 600, also apply. The regulations and guidance documents can be accessed on the DOE Financial Assistance Home Page at:
<http://www.pr.doe.gov/fahome.html>

PROGRAM ANNOUNCEMENT QUESTIONS & ANSWERS: A pre-proposal conference will **not** be held by DOE. Written questions may be submitted via e-mail to Melanie_P_Fletcher@rl.gov by July 31, 2002. Responses to questions will be periodically placed on the Richland Operations Office Procurement Web Site at <http://www.hanford.gov/procure/pro.htm>.

PROPOSAL PREPARATION COSTS: This program announcement does not obligate

the Government to pay any costs incurred in the preparation and submission of pre-proposals or proposals, or for making necessary studies or designs for the preparation thereof or to acquire or contract for any services.

FOR FURTHER INFORMATION CONTACT:

***Melanie P. Fletcher, Contract Specialist
US Department of Energy
Richland Operations Office
P.O. Box 550, MS A7-80
825 Jadwin
Richland Wahington 99352
Phone: (509) 376-4828
Fax: (509) 372 2762
Electronic Mail: mailto:melanie_p_fletcher@rl.gov***

This solicitation will be published on the Richland Operations Office Procurement Web Site at: <http://www.Hanford.gov/procure/pro.htm> on or about June 14, 2002.

Attachment A
Summary Budget Table for I-NERI Proposals

U.S. Budget Summary

Task	Principle Org (in \$K)			Sub* #1 (in \$K)			Sub* #2 (in \$K)			Sub* #3 (in \$K)			Total
	FY03	FY04	FY05	FY03	FY04	FY05	FY03	FY04	FY05	FY03	FY04	FY05	
Total													

* Include separately and in the total, all other participant funding including: DOE labs, other federal labs, universities, private companies, consultants, etc.

ROK Budget Summary

Organization	FY03	FY04	FY05	FY03	Total
Principle Org					
Sub #1					
Sub #2					
Sub #3					
Total					